UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P O Box 1450
Alexandria, Virginia 22313-1450
www uspto gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,790	12/04/2001	Jan-Mark Geusebroek	MAIA-0002	5797

45511 7590 10/14/2008
WOODCOCK WASHBURN LLP
CIRA CENTRE, 12TH FLOOR
2929 ARCH STREET
PHILADELPHIA, PA 19104-2891

EXAMINER	
ROSARIO, DENNIS	

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
10/14/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@woodcock.com

Office Action Summary	Application No.	Applicant(s)	
	10/009,790	GEUSEBROEK, JAN-MARK	
	Examiner	Art Unit	
	Dennis Rosario	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6,8,10-14,16-25 and 27-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6,8,10-14,16-25 and 27-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment was received on 8/4/08. Claims 1-3,6,8,10-14,16-25 and 27-30 are pending.

Response to Arguments

2. Applicant's arguments filed 8/4/08 have been fully considered but they are not persuasive.

Applicants state that Chen does not determine from a plurality of focus scores for a plurality of images a focus position for the object. The examiner respectfully disagrees since Chen does determine from a plurality of focus scores (or focus measurements from each block in fig. 5:51) for a plurality of images (or frame portions in fig. 5:54) a focus position (foreground in fig. 5:55) for the object.

Applicants state that Chen does not contemplate using a plurality of spatial extents to determine for each image a plurality of focus scores. The examiner respectfully disagrees since Chen does contemplate using a plurality of spatial extents (via a vary size of said block that ranges from a single pixel to an A X B array as discussed in col. 3, lines 50-55) to determine for each image a plurality of focus scores (via said fig. 5).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., page 10, line 13: "**single image**") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants state that Chen's measure focus and smooth frame are not defined by the convolution. The examiner respectfully disagrees since said measure focus is based on a method "known in the art" in col. 7, lines 47-49 as shown in fig. 4 from which said convolution is used.

Applicants state that Chen does not disclose a step of correlation or convolution of pixel values with a mathematical smoothing function. The examiner respectfully disagrees since Chen discloses a step of "convolution" in col. 6, lines 56-58 of two equations (2) in column 6 and (4) in column 7 where the result of said convolution is equation (8) that produces an image of pixels with a "smoother" in col. 7, lines 32-34 edge relative to a case of an in focus image.

Applicants state that Hartman does not disclose a mathematical smoothing function. The examiner respectfully disagrees since Hartman teaches a differentiating then smoothing via said CSSMTH wherein broadly the differentiating of Hartman corresponds to the claimed mathematical as known to one of ordinary skill in mathematics and CSSMTH corresponds to the claim smoothing wherein both the differentiating and CSSMTH are functions.

Applicants state that Hart provides no details of smoothing. The examiner respectfully disagrees since Hartman teaches the details of smoothing though not explicitly in the form of eliminating humps for edge detection after differentiating as discussed in col. 10, lines 47 to col. 11, line 7. Thus the cited

portion allows a user to mentally smooth out humps or ignore humps so as to be ignored by the system of Hartman and to detect humps of interest.

Applicants state that Hartman makes no reference to a mathematical smoothing function. The examiner respectfully disagrees since at the least Hartman teaches a function which is differentiation, as know to one of ordinary skill in the art of mathematics, the result of which is shown in fig. 10 that is mentally smoothed by a user to allow detecting edges of interest. Thus, the result of detecting edges in Hartman is the result of the claimed mathematical smoothing function.

Applicants state that Frost does not teach. The examiner respectfully disagrees since Frost teaches fitting focus scores to a polynomial function and moving the optical instrument to a position related to a maximum of the polynomial function fitting focus scores to a polynomial function (the result of which is shown in fig. 7:701 that represents a function that connects the dots of 701) and moving the optical instrument to a position (corresponding to fig. 4:415) related to a maximum (or peak as determined in fig. 4:412 the result of which is show in fig. 7) of the polynomial function (fig. 7:701).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 11,12,17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (US Patent 5,710,829).

Regarding claim 11, Chen discloses an optical instrument for viewing an object and having an auto-focusing mechanism, the optical instrument being adapted to acquire a first digital image of the object through the optical instrument, the first digital image comprising:

a) a plurality of pixels having pixel values (corresponding to fig. 1:10);

b) and auto-focusing mechanism (fig. 1:20: used for automatically measuring focus) having (upon the output of said 10) a combined gradient and smoothing operator (fig. 1:30 a detail view of which is fig. 5:50-56 that uses both a gradient to detect edges and smoothing 52 together to obtain end product 56) applied in one pass (given that fig. 5 is a pipeline process) to at least some of the pixel values of the first digital image and to obtain a focus score (fig. 5:51) for the first digital image, wherein the smoothing function (said 52) has a settable spatial extent (given that 52 works on a variable block size basis as discussed in col. 3, lines 50-62);

c) the instrument (fig. 1:10) being further adapted for determining from a plurality of focus scores (corresponding to fig. 5:51) for a plurality of images (or blocks) an optical axis focus position (fig. 5:55: given that 55's foreground is broadly a position based on an optical model as shown in fig. 4 that shows an OPTICAL AXIS thus, the foreground can reasonably be the claimed optical axis focus position) for the object.

Regarding claim 12, Chen teaches the optical instrument of claim 11, wherein the spatial extent (said variable block size) of the smoothing function is manually or electronically settable (given that the block size is set in an electronic environment).

Regarding claim 17, Chen teaches the optical instrument according to claim 11, the instrument being adapted to determine for each image a plurality of focus scores using a plurality of spatial extents (corresponding to "The focus of each block is measured" in col. 7, lines 47,48) for the combined gradient and smoothing operator.

Regarding claim 18, Chen teaches the optical instrument according to claim 11, wherein the combined gradient and smoothing operation is a one (given that the gradient is measured in terms of height as discussed in col. 7, lines 27-34,the gradient is a one dimensional function is terms of depth) or two-dimensional function.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1,2,8,10,16,19,22,23,25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US Patent 5,710,829) in view of Frost et al. (US Patent 6,647,025).

Regarding claim 1, Chen teaches a method of autofocus of an optical instrument for viewing an object and having an auto-focusing mechanism, comprising the steps of:

step 1: acquiring a first digital image (corresponding to fig. 12,num. 50) of the object through the optical instrument, the first digital image comprising a plurality of pixels having pixel values;

step 2: applying a digital gradient filter (fig. 1,num. 30 or in detail in fig. 5) to at least some of the pixel values (output of fig. 1:20) of the first digital image to obtain a focus score (fig. 5,num. 51) for the first digital image; the digital gradient filter (fig. 1,num: 30) comprising (as shown in fig. 5,numerals 50-56) a combined gradient (fig. 5:51 obtains a "focus gradient" in col. 7, line 49) and smoothing (fig. 5:52) operator that carries out both gradient and smoothing operations in one pass (as shown by the structure of fig. 5 that is a pipeline structure that does not repeat operations or go back to numeral 50 from numeral 56; further evidence of the claimed "one pass" is shown in fig 12, numerals 50-202 that shows a parallel pipeline structure that does not repeat operation or go back to numeral 50 from numeral 202); wherein the smoothing operation has a settable spatial extent (given that blocks have variable size as discussed in col. 3, lines 49-61);

step 3: determining a first plurality of focus scores (fig. 5:51) for the first digital image using the digital gradient filter (represented as all of fig. 5) with a first plurality of spatial extents (given that said blocks can be of variable size) by applying for each spatial extent (or block) the method steps 1 and 2.

Chen does not teach the remaining steps, but teaches a basic model for focusing images as shown in fig. 4.

Frost teaches a corresponding structure 107 in fig. 1 and the additional steps of

step 4: moving the object relative (via a stage as shown in fig. 1:103) to the optical instrument (fig. 1:107) along the optical axis (not shown in Frost) thereof and acquiring a second digital image (corresponding to fig. 7: FOCUS SCAN STEP=1 starting from a count of zero) and a second focus score (that has a corresponding score of about 0.2) therefore in accordance with the method of step 3 (Frost is not clear if step 4 is done in accordance with step 3 which requires steps 1 and 2);

step 5: continue moving (up another step as focus scan step=2 in fig. 7) the object (fig. 1: 201) relative to the optical instrument (fig. 1:107) along the optical axis thereof in the same (positive direction as indicated by the horizontal axis of fig. 7) direction in accordance with steps 1 to 3 (Frost is not clear if step 5 was done in accordance with steps 1-3) to acquire at least three digital images (corresponding to focus scan step=2) and first to third focus scores (all three scores corresponding to steps 0-2 are about 0.2) associated therewith; and

step 6: determining from the first to third focus scores (all about 0.2) a focus position (or a next step at focus scan step=3) for the object and moving the optical instrument (via said stage) to this position (focus scan step=3 to obtain a corresponding score that appears above said 0.2).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen's teaching of obtaining focus measurements with an optical model that shows an optical axis in fig. 4:300 with Frosts actual optical system of fig. 1:107 that obtains focus scores, because Frosts system provides the required hardware such as fig. 1:103,107 and 108 that is missing in Chen.

Regarding claim 2, Chen teaches the method of claim 1, wherein the spatial extent of the smoothing function is manually (corresponding to an implied user that "preferably" in col. 7, line 65 sets the block size) and/or electronically settable.

Regarding claim 8, Chen teaches the method according to claim 1, wherein the digital filtering function combined gradient and smoothing operator is a one or two (as indicated by the 2-D image in fig. 7)-dimensional function.

Regarding claim 10, Chen teaches the method according to claim 1, further comprising the step of selecting (as discussed above in claim 1 with respect to "assigning a pixel") the spatial extent of the smoothing operation.

Regarding claim 16, Chen does not teach claim 16, but teaches measuring the focus in fig. 5:51.

Frost teaches a form of measuring focus in the terms of a score and claim 16 of fitting the plurality of focus (or dots in fig. 7) scores to a polynomial function (or a line that connects the dots) and determining the focus position (fig. 4:415) as a position related to a maximum of the polynomial function (as determined in fig. 4:412).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen measurement of focus with Frost's focus score, because Frost's focus score provides a "simpler…focus quality measure" in col. 7, lines 17,18.

Regarding claim 19, Chen teaches the optical instrument according to claim 11, wherein the combined gradient and smoothing operation (fig. 5:51,52) is a linear correlation or convolution (given that 51 and 52 are based on a "convolution" in col. 6, lines 56-58) with a Gaussian derivative function of first, second, or higher order.

Chen does not teach the remaining limitations of a Gaussian derivative function of at least first order, but teaches a convolution of a Gaussian function, equation (4) in column 7, with a blur function, equation (2) in column 6, all of which is for the purpose of measuring focus.

Frost teaches another form of measuring focus as shown in fig. 7 that has a Gaussian distribution 701 of which a derivative 703 is taken.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen's teaching of a Gaussian function that is used in a convolution operation to measure focus with Frost's Gaussian distribution to measure focus, because Frost's Gaussian distribution "provides a simpler…focus quality measure" in col. 7, lines 17,18.

Regarding claim 22, Chen teaches an auto-focusing mechanism for an optical instrument, the optical instrument being provided for viewing an object and for acquiring a digital image of the object, the digital image comprising a plurality of pixels having pixel values; the mechanism comprising:

a) a combined gradient filter (fig. 1:30 is a filter that is combined with the system of fig. 1) to filter at least some of the pixel values (represented as fig. 1:10) of the digital image to obtain a focus score (via fig. 5:51) for the digital image, the digital gradient filter (a detail view of which is shown in fig. 50:50-56) comprising a combined gradient (said 51 uses gradients) and smoothing operator (said 52 smoothes) applied in one pass (given that fig. 5 is of a pipeline structure), wherein the smoothing function (said 52) has a settable spatial extent (or operates on a variable pixel amounts as discussed in col. 3, lines 49-61);

b) wherein the combined gradient (said 51) and smoothing operator (said 52 are adjacent steps make them combined) is a first spatial derivative of a Gaussian function (not disclosed in Chen).

Chen does not teach the claimed derivative of a Gaussian function, but teaches that edges are detected from gradients as discussed in col. 7, lines 27-34.

Frost teaches a "gradient focus score" in col. 2, lines 57-62 as shown in fig. 7 that is applicable to "pattern recognition" as discussed in col. 2, lines 52-56 and the remaining limitations of a first spatial derivative (fig. 7:704) of a Gaussian function (fig. 7:701 corresponds to the Gaussian portion of "Gaussian filtered" in col. 8, lines 30-33).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen's teaching of detecting edges based on a gradient with Frost's teaching of using a derivative of a Gaussian distribution to obtain a gradient score for pattern recognition, which can be edges, because, Frost's teaching of Gaussian filtering provides a "simpler intensity gradient focus quality measure" in col. 7, lines 17,18.

Claims 23,25 are rejected the same as claim 12,8. Thus, argument similar to that presented above for claims 12,8 is equally applicable to claim 23,25.

Regarding claim 27, Chen teaches the mechanism according to claim 22, comprising the mechanism being adapted for determining from a plurality of focus scores (or measurements for each block) for a plurality of images (which are said blocks) a focus position (foreground or background in the context of fig. 5) for the object.

Regarding claim 28, Frost teaches the mechanism according to claim 27, further adapted for fitting the plurality of focus scores (or dots) to a polynomial function (or an interpolation line that connects said dots) and determining the

focus position (at the scan step of a zero crossing) as a position related to a maximum (or peak) of the polynomial function.

Claim 29 is rejected the same as claims 1 and 16. Thus, argument similar to that presented above for claims 1 and 16 is equally applicable to claim 29.

Claim 30 is rejected the same as claim 1. Thus, argument similar to that presented above for claim 1 is equally applicable to claim 30 except for the last limitation that Chen teaches in part of wherein the combined gradient and smoothing operator (fig. 5:51 and 52) is a linear correlation or convolution ("convolution" in col. 6, lines 56-58) with a Gaussian function ("Gaussian function" in col. 7, lines 1,2) comprising a mathematical smoothing function (fig. 5:52) having a negative and positive lobe around the origin thereof (not taught in Chen), the mathematical smoothing function (fig. 5:52) having only one zero crossing (not taught in Chen) and being limited in spatial extent (given that said 52 operates on a pixel by pixel basis which is the smallest spatial extent and does not operate at the sub-pixel level; thus, a pixel is the limit in spatial extent).

Chen does not teach the claimed lobes around the origin and the crossing.

Frost teaches a Gaussian distribution as shown in fig. 7:701 from which a derivative is taken that takes the form of the claimed lobes and crossing.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen Gaussian function with Frost's derivative of a Gaussian distribution, because Frost's teaching of the derivative enables a simply way of measuring focus in col. 7, lines 17,18.

7. Claims 3,13,21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US Patent 5,710,829) in view of Hartman (US Patent 4,592,089).

Regarding claim 3, Chen teaches a method of autofocus for an optical instrument for viewing an object and having an auto-focusing mechanism, comprising the steps of:

Step 1: acquiring a first digital image (via fig. 4: IMGE PLANE) of the object (fig. 4:303) through the optical instrument (fig. 4:LENS), the first digital image (represented in fig. 5 as num. 50) comprising a plurality of pixels having pixel values;

Step 2: applying a digital filter (represented as all of fig. 5) comprising a combined gradient (fig. 5:51 uses gradients) and smoothing operator (fig. 5:52) to at least some of the pixel values(on a block by block basis) of the first digital image to obtain a focus score (upon the output of fig. 5:51) for the first digital image; wherein the combined gradient and smoothing operator (fig. 5:51,52) carries out both gradient and smoothing operations in one pass (given that fig. 5 is of a pipeline structure); wherein the combined gradient and smoothing operator (said 51,52) is defined by the linear correlation or convolution ("convolution" in col. 6, lines 56-58 of equation (2) with equation (4)) of the pixel values (given that the result of the convolution results in an image with pixels) with a mathematical smoothing function having a negative and positive lobe around the origin thereof, the mathematical smoothing function having only one zero crossing and being limited in spatial extent in the it extends over a distance smaller than or equal to the image size and extends at least over three pixels either side

of a pixel whose value is being filtered (Chen does not teach the remaining limitations of claim 3).

Chen does not teach a smoothing function having lobes and a crossing and extent, but teaches measuring focus, fig. 5:51, based on "edge strength" in col. 8, line 10 and preferably uses “Sobel edge detection” in col. 8, line 15 along with a smoothing function, fig. 5:52.

Hartman teaches detecting edges via zero-crossing of a derivative corresponding to figures 10,11B and 12B and the remaining limitations of:

a) having a negative and positive lobe around the origin (as shown in fig. 10) thereof, the mathematical smoothing function (said CSSMTH) having only one zero crossing (as shown in fig. 10) and being limited in spatial extent (fig. 10 shows limits P1 and P2) in that it extends over a distance (as shown by the doubled headed arrow in fig. 9) smaller than or equal to the image size (as shown in fig. 10 that has a length of P1 to P2) and extends (as shown by a larger double headed arrow in fig. 8) at least over three pixels (as shown by the dashed box in fig. 8) either side of a pixel (fig. 8: (X0, Y0)) whose value is being filtered (corresponding to said smoothing function that “copes” in col. 10, line 38 for noise that is “amplified” in col. 10, line 39 due to the “differentiation process” in col. 10, line 40 by allowing a user to set a sensitivity level of a hump threshold as discussed in col. 10, line 47 to col.11, line 7.)

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen's edge detection and smoothing with Hartman's teaching of edge detection with smoothing, because Hartman's teaching of edge detection can "ignore the spurrious boundary [due to eliminating the humps, which is a form of smoothing,] and detect the correct one" in col. 10, lines 67,68 as specified by a user via said threshold.

Claims 13 and 24 are rejected the same as claim 3 Thus, argument similar to that presented above for claim 3 is equally applicable to claims 13 and 24.

Claim 21 is rejected the same as claim 12. Thus, argument similar to that presented above for claim 12 is equally applicable to claim 21.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US Patent 5,710,829) in view Frost et al. (US Patent 5,647,025) as applied to claim 1, above, further in view of Ortyn et al. (US Patent 5,841,124).

Regarding claim 6, Chen does not disclose claim 6, but teaches using a video camera represented in fig. 1 as num. 10.

Ortyn teaches using a video camera represented in fig. 2 as num. 512 that is attached to the claimed microscope, fig. 2, num. 510 of claim 6.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen video camera with Ortyn's video camera with microscope, because Ortyn's video camera with microscope provides images of "clinical value" in col. 1, line 27.

9. Claims 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US Patent 5,710,829) in view of Ortyn et al. (US Patent 5,841,124).

Regarding claim 14, Chen of the combination does not disclose claim 14, but teaches using a video camera represented in fig. 1 as num. 10.

Ortyn teaches using a video camera represented in fig. 2 as num. 512 that is attached to the claimed drive device, fig. 1A, num. 504 of claim 14.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen's video camera with Ortyn's video camera with drive device in fig. 1A,num. 504 because Ortyn's video camera with microscope provides images of "clinical value" in col. 1, line 27.

Regarding claim 20, Chen does not disclose claim 20, but teaches uses a camera represented in fig. 1 as 10.

Ortyn teaches a camera in fig. 1A:512 along with a microscope as represented in fig. 1A as 522.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chen camera with Ortyn's camera with microscope, because Ortyn's camera and microscope provides scientific and clinical value.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Rosario/
Examiner, Art Unit 2624

/Matthew C Bella/
Supervisory Patent Examiner, Art Unit 2624